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# Sex and the Shaheed

Insights from the Life Sciences on Islamic  
Suicide Terrorism

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and  
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From the biological perspective, the act of suicide is a puzzle. Although animals will occasionally refuse to eat (or, in the case of marine mammals, beach themselves) because they are ill, and appear prepared to fight to the death to protect their young, no parallel to human patterns of suicide is easily found in the natural world.<sup>1</sup> Among humans, it is primarily young adults who commit suicide; otherwise, generalizations are hard to make. In the West, more young males succeed in taking their own lives, whereas in China, it is young females who commit suicide more often.<sup>2</sup> Most suicides result only in the death of the individual who commits the act or those involved in a murder-suicide. There is, however, a distinct subcategory of individuals who commit suicide that is most puzzling of all—the suicide terrorist. The suicide terrorist's aim appears not only to die but to kill as many others as possible to advance a political objective. This form of suicide is most closely associated with Islamic terrorism, though it does play a role in a few other terrorist movements, including the recently defeated Tamil Tigers of Sri Lanka.

In this article, we argue that the life sciences can offer insights into suicide terrorism in the Islamic context. We argue that suicide terrorism as a cultural practice could not exist without it intersecting at some point with evolutionary motivations. To approach this topic, we must first consider the significance of suicide terrorism in the Islamic context to the contemporary international system.

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1. The classic study of human motivations for committing suicide is Emile Durkheim, *Suicide: A Study in Sociology*, trans. John A. Spaulding and ed. George Simpson (New York: Free Press, 1997). No evidence exists that animals commit suicide. On suicide in the animal world, see Dennis Chitty, *Do Lemmings Commit Suicide? Beautiful Hypotheses and Ugly Facts* (New York: Oxford University Press, 1996).

2. World Health Organization, WHO Statistical Information System database, 2007, <http://www.who.int/whosis/en/index.html>.

For at least a decade before the suicide terrorist attacks of September 11, 2001, Islamic suicide terrorists had repeatedly attacked U.S. interests both at home and abroad, including the 1993 attack against the World Trade Center and, in 1998, attacks against U.S. embassies in Africa. Nevertheless, the U.S. government did not make suicide terrorism *per se* a focus of U.S. national security policy. After September 11, however, the United States adopted a more robust counterterrorism policy. U.S. campaigns in Afghanistan, the Horn of Africa, Indonesia, Iraq, the Maghreb, Malaysia, Pakistan, the Philippines, the Sahel, and Thailand, as well as in European states, have done much to weaken the most notorious Islamic group using suicide terrorism against the West, al-Qaida.<sup>3</sup>

Yet, even if al-Qaida is diminished, Islamic fundamentalist suicide attacks will continue to be executed by al-Qaida-inspired groups, Palestinian terrorist groups such as Hamas and Hezbollah, and the Taliban because they are an effective asymmetric tactic against some of the world's most hardened security forces. Islamic fundamentalist suicide terrorists have penetrated British, French, Israeli, and U.S. defenses, among others. Moreover, only suicide terrorists could have executed the September 11 attacks or penetrated the Israeli security corridor bordering the Palestinian Authority, because they alone could navigate the countless security obstacles and be capable of self-destructing at a precise location and time while causing the greatest damage. As Mustafa Alani puts it, "It's what we call a thinking, walking bomb. He watches the whole scene [and] chooses the best time and best location."<sup>4</sup> Suicide terrorism is the ultimate smart bomb, demonstrating unparalleled political commitment and personal resoluteness.

Scholars have examined Islamic fundamentalist suicide terrorism primarily through the lens of international politics, economics, and cultural studies, and each offers important insights into the motivation and recruitment policies of groups that practice it. There is, however, another discipline that can make a useful contribution—the life sciences. We argue that the application of concepts and approaches from the life sciences yields new insights into (1) the

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3. Although al-Qaida is the most well known Islamic fundamentalist terrorist organization, it is far from the only one. In fact, it is best to conceive of a family of groups, of which there are about forty directly affiliated with or trying to imitate al-Qaida. The most dangerous of the groups are principally based in and recruit in Europe and pursue targets in Europe, Russia, and Central Asia; these groups include al-Takfir wa al-Hijra (Excommunication and Exile); the Salafist Group for Preaching and Combat (known by its French acronym GSPC); and Hizb ut-Tahrir al-Islami (Islamic Party of Liberation).

4. Mustafa Alani, director of security and terrorism studies at the Gulf Research Center in Dubai, quoted in Patrick Quinn, "U.S. Draws Portrait of Iraq Bombers," Associated Press, March 15, 2008, [http://www.usatoday.com/news/world/2008-03-15-1207869913\\_x.htm](http://www.usatoday.com/news/world/2008-03-15-1207869913_x.htm).

causal context of Islamic fundamentalist suicide terrorism, (2) the motivation of suicide terrorists, and (3) policy approaches to subvert this form of terrorism. A consilient approach, incorporating ideas from the life sciences and the social sciences, can aid social scientists and policy analysts in addressing the problem of Islamic suicide terrorism.<sup>5</sup> The life sciences can be a source of new analogies and examples that might help scholars and analysts to approach the problem in fresh ways and derive effective policies.<sup>6</sup>

Our argument is important for three reasons. First, understanding the motivations of Islamic fundamentalist terrorists is critical for creating policies to stop them, ideally before they become terrorists. Second, our approach helps to illuminate why few Islamic fundamentalist terrorists defect and how policies may be crafted to promote defections. Finally, it advances the goal of consilience—that is, using insights from human evolution and ecology, as well as from the social sciences, to create a more comprehensive and detailed understanding of human behavior. In essence, consilient approaches bridge the gap between the life sciences and the social sciences. For the advancement of knowledge concerning human behavior, there may be no more important task than removing the barriers between the life sciences and the social sciences, which we believe will revolutionize both fields of study.<sup>7</sup>

The article begins with a discussion of the conditions that social scientists have traditionally identified in seeking to explain Islamic fundamentalist suicide terrorism. We then apply findings from the life sciences to help deepen these traditional explanations. We suggest that high levels of gender differentiation, comparatively high levels of polygyny, and obstructed marriage markets in Islamic societies introduce additional powerful forces whose logic must be probed by those seeking to understand and undermine Islamic terrorism.<sup>8</sup> Finally, we offer several recommendations for countering Islamic suicide terrorism.

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5. Evolutionary theorist and entomologist Edward O. Wilson first called attention to the value of the consilient approach in Wilson, *Consilience: The Unity of Knowledge* (New York: Vintage, 1999). Bradley A. Thayer adopted this approach to study war and ethnic conflict. See Thayer, *Darwin and International Relations: On the Evolutionary Origins of War and Ethnic Conflict* (Lexington: University Press of Kentucky, 2004).

6. See, for example, Robert H. Sprinkle, "The Cult in Power Politics: Evolution of a Devotional Weapon," paper presented at the Twenty-seventh Annual Meeting of the Association for Politics and the Life Sciences, Cincinnati, Ohio, October 11, 2007.

7. Indeed, in an otherwise exceptional compilation, there is no mention of life sciences in Diego Gambetta, ed., *Making Sense of Suicide Missions* (New York: Oxford University Press, 2005).

8. Every analysis has its boundaries, and this article is no exception. We do not attempt to explore all of the causes of suicide terrorism in the Islamic context, or why states sponsor terrorism, or the myriad of motivations that might lead individuals alternatively to support terrorist groups short of suicide terrorism. These issues are important to study and can be informed by the life sciences, but they fall outside the scope of this article. For considerations, see Mia Bloom, *Dying to Kill: The*

### *Conventional Explanations for Islamic Terrorism*

Social science scholars have argued that three factors are responsible for the rise of Islamic suicide terrorism: international anarchy, U.S. hegemonic intervention in Islamic societies, and fundamentalist Islamic belief systems.

International politics is anarchic, with no governmental authority above the level of the state in international politics. This is the key difference between domestic politics, where there is typically hierarchic government, and international politics, where there is none to adjudicate disputes and provide protection for citizens.<sup>9</sup> The anarchic condition of the international system fosters an environment where war or human rights abuses are always possible. The lack of international governance also permits the persistence of failed states, in which sovereignty is contested by different political factions. In the 1990s, for example, al-Qaida established a presence in the failed state of Sudan. Similarly, the failed state of Afghanistan under the Taliban permitted al-Qaida to flourish; to train a new generation of terrorists; and to become the threat it, its spin-offs, and related groups are today.

U.S. hegemony is a second conventional explanation for the rise of Islamic terrorism. As the only remaining superpower at the end of the Cold War, the United States became the world's military, economic, and ideological leader. The unmatched power of the United States allows it to use military force and support allied regimes the world over—including in the Islamic world, causing deep resentment.

In 1990, for example, Iraq's invasion of Kuwait resulted in the United States basing forces in Saudi Arabia and significantly expanding its military presence in the Persian Gulf. A consistent rationale that Islamic fundamentalist terrorists have used in defending their actions has been to eliminate the U.S. military presence in the Islamic world, especially in Saudi Arabia (home to Islam's most important religious sites) and expose the United States for the vulnerable and degenerate hegemon they believe it is. Progress toward this objective was achieved shortly before the 2003 invasion of Iraq, when permanently stationed U.S. forces were withdrawn to other locations in the Persian Gulf. Since the invasion, Islamic fundamentalist terrorists have redoubled their efforts to force the United States from the region.

Another rationale for Islamic fundamentalist terror attacks centers on

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*Allure of Suicide Terror* (New York: Columbia University Press, 2005); and Olivier Roy, *Globalized Islam: The Search for a New Ummah* (New York: Columbia University Press, 2004), pp. 42–54, 247–289.

9. Kenneth N. Waltz, *Theory of International Politics* (Reading, Mass.: Addison-Wesley, 1979), pp. 114–116.

the Arab world's "apostate" regimes. To protect its worldwide interests, the United States has established a network of alliances in the Middle East—from Morocco to the Gulf sheikhdoms and from Turkey to the Horn of Africa and Somalia. Islamic fundamentalist terrorists view these alliances as testament to the heretical and hypocritical nature of the governments behind them. Indeed, most Islamic fundamentalist terrorism is directed against these governments and their supporters—what the jihadists call the "near enemy"—who are reviled because they are seen as apostates who have rejected Islam, embraced a secular ideology, and allied with the United States, the so-called far enemy.<sup>10</sup>

Until al-Qaida started to attack the United States in the 1990s, the country had rarely been the target of Islamic fundamentalist terrorists. In the 1980s, Hezbollah attacked U.S. forces in Lebanon for nationalistic, not religious, reasons. The rationale for al-Qaida's attacks against the United States, its military, and its allies flows not only from its grand strategic goal of forcing the United States to withdraw militarily from the Middle East but also from its desire to terminate support for U.S. regional allies. Al-Qaida's lasting contribution to Islamic fundamentalist terrorism was to target the "far enemy" before targeting the apostate regimes. Deprived of U.S. support, the apostate regimes would fall, and the Islamic community would become pure.

A third conventional explanation concerns how a narrow, fundamentalist interpretation of the religion of Islam provides inspiration, justification, legitimation, and political and cultural support to suicide terrorism. Islamic fundamentalist terrorists justify their actions based on Salafiyya or Wahhabism, which are fundamentalist interpretations of the Koran and sunna (or hadith), the sayings and traditions of the prophet Mohammed.<sup>11</sup> Many Islamic scholars dispute the terrorists' interpretation of Islam, but for the terrorists and many of their sympathizers, the dispute is irrelevant.<sup>12</sup>

Islamic terrorists point to the explicit scriptural approbation of suicide in the Koran as justification for their suicide attacks. Islamic suicide terrorists are considered *shaheeds*, who die as martyrs for Allah.<sup>13</sup> Mohammed himself be-

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10. Fawaz A. Gerges, *The Far Enemy: Why Jihad Went Global* (New York: Cambridge University Press, 2005), pp. 43–79, 119–184; and Mohammed M. Hafez, *Why Muslims Rebel: Repression and Resistance in the Islamic World* (Boulder, Colo.: Lynne Rienner, 2003), pp. 187–190.

11. There is no single Salafi movement or sect. Analyses that provide insight into Salafiyya and Wahhabism include Ahmad S. Moussalli, *Moderate and Radical Islamic Fundamentalism: The Quest for Modernity, Legitimacy, and the Islamic State* (Gainesville: University Press of Florida, 1999); and Hamid Algar, *Wahhabism: A Critical Essay* (Oneonta, N.Y.: Islamic Publications International, 2002).

12. The literature on an evolutionary explanation of religious beliefs is well developed. Perhaps the best analysis is provided by David Sloan Wilson, whose work allows scholars to understand how religion meets human needs. See Wilson, *Darwin's Cathedral: Evolution, Religion, and the Nature of Society* (Chicago: University of Chicago Press, 2002).

13. According to Raphael Israeli, *shaheed* can have three meanings: "a martyr who died for the

seeded his followers to distinguish themselves in battle so they could enjoy the considerable rewards reserved only for *shaheeds*. According to one hadith, a *shaheed* "will be pardoned [for his sins] by Allah, will take his place in Paradise, will be dressed with the Cloth of Faith, will marry beautiful-eyed young women, will be spared the torments of the tomb, will not submit to the Day of Judgment, and will have one of the world's best precious stones adorn his crown."<sup>14</sup> In paradise, *shaheeds* will enjoy other rewards reserved only for them.

It may be tempting to dismiss these beliefs as incredible, but students of suicide terrorism do so at their peril. As one expert has written, "There is no doubt . . . that for Muslims whose pursuit of jihad is an active and preponderant aspect of their lives, particularly so among the Palestinians, the question of reward in Paradise constitutes a crucial portion . . . of their worldview and plays a major role in their battle motivation."<sup>15</sup> This is evidenced in "the Palestinian press and the death announcements of martyrs, which are usually pre-recorded in person by the [suicide terrorist] and then kept as part of the cultivated patrimony of martyrdom . . . there is no mincing of words; indeed, there is boasting, desire, expectations and impatient eagerness to take the short cut and join in one stroke the pleasures of Paradise."<sup>16</sup>

In sum, international anarchy, U.S. hegemonic involvement in Islamic states, and fundamentalist Islamic belief systems (including the explicit approbation of suicide in narrow interpretations of Islamic scripture) are the conventional foundation for Islamic suicide terrorism. In the sections that follow, we discuss additional explanations grounded in the life sciences that do not detract from these conventional explanations, but rather augment and deepen the explanations offered.

### *Young Adult Males and Insights from the Life Sciences*

All of the major religions developed in a resource-scarce ecology.<sup>17</sup> For this reason, most major religions historically promoted a dominance hierarchy (explicit or de facto), which scholars in the life sciences have argued enhances

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sake of Allah; the fallen in the jihad; or a Muslim who experienced suffering before a tragic death." Israeli, *Islamikaze: Manifestations of Islamic Martyrology* (London: Routledge, 2003), p. 74. In this article, we use the first meaning exclusively.

14. Quoted in Raphael Israeli, "The Promise of an Afterlife Motivates Suicide Terrorists," in Lauri S. Friedman, ed., *What Motivates Suicide Bombers?* (Detroit, Mich.: Greenhaven, 2005), p. 38.

15. Israeli, *Islamikaze*, p. 218.

16. *Ibid.*, p. 218.

17. We contend that certain behaviors, which would be reflected in religious beliefs, would tend to evolve in an anarchic, resource-scarce environment and that these behaviors might last longer in relatively isolated parts of the Muslim world, such as the Arabian Peninsula, where societies



group survival.<sup>18</sup> Individuals in resource-scarce environments have difficulty accessing potable water; food; productive land; housing in safe, relatively disease-free locales; and access to mates. Even in the twenty-first century, resource scarcity shapes the cultures of at least 80 percent of the human species. The fitness-enhancing aspects of dominance hierarchies in the context of resource scarcity, therefore, cannot be overlooked.

Seen through the lens of evolutionary theory, a dominance hierarchy typically includes individuals in social groups who have regular priority of access to resources.<sup>19</sup> The creation of this hierarchy may be accompanied by and maintained through the use of violence, producing a competitive social system. Most social mammals live in an organization with a single leader, the alpha male, who leads the group and controls its resources. The ubiquity of this behavior among social mammals strongly suggests that this form of organization contributes to species fitness. Ethologists argue that dominance hierarchies evolved because they help to defend their members against predators, promote the harvesting of resources, and reduce intragroup conflict.<sup>20</sup> Dominance hierarchies can also produce a concomitant feeling of empowerment—of belonging to a dynamic, strong organization—which, as John Tooby has

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sought little contact with the outside world, than in more cosmopolitan parts of the Muslim world, such as Algiers, Istanbul, and Jakarta.

18. Such promotion can be seen most clearly in the historical entanglement between religious and political power in Judaic, Christian, and Islamic societies. On the role of dominance hierarchies, see L.L. Betzig, *Despotism and Differential Reproduction: A Darwinian View of History* (New York: Aldine, 1986); David F. Bjorklund and Anthony D. Pellegrini, *The Origins of Human Nature: Evolutionary Developmental Psychology* (Washington, D.C.: American Psychological Association, 2002), pp. 268–270, 289–290, 293–294; Robert A. Hinde, *Biological Bases of Human Social Behaviour* (Dallas, Tex.: McGraw-Hill, 1975); Thayer, *Darwin and International Relations*, pp. 71–72; Richard Wrangham and Dale Peterson, *Demonic Males: Apes and the Origins of Human Violence* (Boston: Houghton Mifflin, 1996), p. 199; and Richard W. Wrangham, “Evolution of Coalitionary Killing,” *Yearbook of Physical Anthropology*, Vol. 42 (1999), pp. 1–30.

19. Robert H. Frank, *Choosing the Right Pond: Human Behavior and the Quest for Status* (New York: Oxford University Press, 1985).

20. Joseph Lopreato, *Human Nature and Biocultural Evolution* (Boston: Allen and Unwin, 1984); Donald L. McEachron and Darius Baer, “A Review of Selected Sociobiological Principles: Application to Hominid Evolution II: The Effects of Intergroup Conflict,” *Journal of Social and Biological Structures*, Vol. 5, No. 2 (April 1982), pp. 121–139; and K.E. Moyer, “The Biological Basis of Dominance and Aggression,” in Diane McGuinness, ed., *Dominance, Aggression, and War* (New York: Paragon, 1987), pp. 1–34. Stanley Milgram also notes the importance of what he terms “dominance structures.” He argues that the “potential for obedience is prerequisite of . . . social organization.” See Milgram, *Obedience to Authority: An Experimental View* (New York: Harper and Row, 1974), p. 124. Many people in Milgram’s famous experiments defined themselves as “open to regulation by a person of higher status. In this condition the individual no longer views himself as responsible for his own actions but defines himself as an instrument for carrying out the wishes of others” (p. 134). Ethological studies have confirmed that a hierarchical dominance system within a primate band minimizes overt aggression and that such aggression increases when the alpha male is challenged. For an excellent overview, see Bruce M. Knauft, “Violence and Sociality in Human Evolution,” *Current Anthropology*, Vol. 32, No. 4 (August–October 1991), pp. 391–409.



noted, is particularly attractive to males.<sup>21</sup> Joining or even supporting a social group, if that group appears more efficacious than other organizations in society, results in individuals feeling more powerful.

Although membership in a social group can offer substantial rewards, these are not distributed equally in dominance hierarchies. The behavior of males, in particular, is fundamentally shaped by their status ranking within the group. A small group of elite males holds power and controls access to resources, while preventing a larger group of subordinate males from accessing those resources. Non-alpha males who live in a tight dominance hierarchy will constantly look for ways in which they can have an impact or call attention to themselves to increase their social status and attractiveness as mates within the group, as a prelude to one day achieving alpha status themselves. Among social mammals, non-alpha males will also look for opportunities to change the social hierarchy in their favor, including furtive mating and the use of violence.

The tension between group solidarity and reproductive success is thus a key feature of social mammalian groups. Evolutionary biologists posit that both forces are enormously powerful in motivating human behavior. In addition to being drawn to “fit” social groups—successful dominance hierarchies—mammals seek to maximize their individual reproductive success. The key to reproductive success for a male in a dominance hierarchy is, well, dominance.<sup>22</sup> The logic is inescapable: non-alpha males are the prime candidates for reproductive failure, and thus are the prime candidates for social unrest in any human group.

Evolution explains why non-alpha males, and principally adolescent or young unmated males, are attracted to ideologies that promote the use of force and promise to reshuffle the players in a dominance hierarchy.<sup>23</sup> Success in us-

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21. John Tooby, remarks at the Darwinian Homeland Security workshop, National Center for Ecological Analysis and Synthesis, Santa Barbara, California, December 10, 2005.

22. Thayer, *Darwin and International Relations*, pp. 71–75.

23. Motivations for female suicide terrorism tend to differ from those for male suicide terrorism. Among these motivations are (1) the female is not married or she is a widow, and her enemy killed her loved ones; (2) she is married but about to be disenfranchised from society and her loved ones; she is about to be divorced by her husband or has just been divorced by her husband; she is barren (and about to be divorced as a result); she loses custody of her children; or she has been caught engaging in adultery and will be killed; (3) her body has been mutilated, making her unmarriageable (or is mentally defective and thus unmarriageable); and (4) she is young, unmarried, and attracted to the gender equality preached by certain ideological movements—but these are seldom Islamic movements (e.g., the Tamil Tigers). There is also the case of a plain, overweight, young woman whose husband married her with the explicit intent of turning her into a suicide bomber a few days later. She backed out of the plan at the last minute, but her husband detonated his bomb, killing himself and many others at the Radisson Hotel in Amman, Jordan. For additional insights, see Karla J. Cunningham, “Cross-National Trends in Female Terrorism”; and Terri Toles Patkin, “Explosive Baggage: Female Palestinian Suicide Bombers and the Rhetoric of Emotion,” both in

ing force, whether against out-groups or in-groups, can overcome lack of status for a non-alpha male. It also signals to alpha males that they may not be victorious in a future intragroup battle.

Alpha males try to resolve this inevitable tension through male bonding. By persuading non-alpha males that they are all “family,” alpha males may be able to dampen intragroup tensions. Evolutionary psychology also helps to explain why this strategy will be effective. Humans evolved in small-group dominance hierarchies—principally the family and extended family hunter groups. Accordingly, the human mind is well suited for comprehending and bonding with small groups of dozens or, at most, 100 or 150 people.<sup>24</sup> To be sure, humans may bond with larger units (e.g., a country), but that requires an extensive effort by the state (e.g., years of nationalistic education). In mimicking the family bond, male-bonded groups often assume the task of educating young males, providing another family-like service. Young people often embrace indoctrination into a belief system through a religion or an educational system, or the combination of the two, such as in madrassas.<sup>25</sup> Emulating the family also makes the male-bonded group more resilient—harder to penetrate and to destroy—similar to the family or the mafia and suggests they must be targeted in unique ways.

The dynamics described above are found among all societies, not only those of the Islamic world. Alpha males will seek to co-opt non-alpha males into male-bonded societies in which violence is controlled by alphas and guided toward out-groups, not in-groups (and especially not targeted toward the alphas). In this study, however, we limit ourselves to examining factors that we argue contribute to Islamic fundamentalist suicide terrorism. Of course, even within the Islamic world, individuals will possess other motivations to conduct suicide attacks. For example, there is evidence that at least some Iraqi male teenagers have been forced to train as suicide bombers under fear of reprisals against their families.<sup>26</sup>

### *Gender Differentiation and Young Adult Muslim Males*

Some analysts have raised the possibility that Islamic conceptions of gender differences and the extreme differences in the way the sexes are treated contribute to the virulence of Islamic terrorism. Indeed, some scholars are be-

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Thomas J. Badey, ed., *Violence and Terrorism*, Annual Editions, 08/09 (Boston: McGraw-Hill Education, 2009), pp. 150–165, 166–175.

24. Tooby, remarks at the Darwinian Homeland Security workshop.

25. Roy, *Globalized Islam*, pp. 92–97.

26. See Kim Gamel, “6 Teens Forced to Train for Suicide,” *Washington Times*, May 27, 2008, <http://www.washtimes.com/news/2008/may/27/6-teens-forced-to-train-for-suicide/>.

ginning to explore whether the rationalization of terrorism is related to the rationalization of violence against, and oppression of, women. Regarding the differences between Western culture and radical Islamic culture, Jean Bethke Elshtain, for example, states, "We underestimate the centrality of the gender question at our peril." She goes on to say that "gender practices are not a sidebar to the war against terrorism as a cultural struggle, but a central issue."<sup>27</sup> Some analysts have proposed a direct link between terrorism and the treatment of women, suggesting that young men brought up in isolation from women in accordance with rigid gender status beliefs, such as existed in Afghanistan under the Taliban, have perpetuated an environment of extremism.<sup>28</sup> Pundits such as Charles Krauthammer opine, "On Sept. 11, 2001, America awoke to the great jihad, wondering: What is this about? We have come to agree on the obvious answers: religion, ideology, political power and territory. But there is one fundamental issue at stake that dares not speak its name. This war is also about—deeply about—sex. For the jihadists, at stake in the war against the infidels is the control of women. . . . Jihadists, like all totalitarianism, oppose many kinds of freedom. What makes them unique, however, is their particular hatred of freedom for women."<sup>29</sup> The life sciences, we argue, help to explain the linkage Krauthammer suggests between gender and terrorism in Islamic culture.

First, among twenty-first-century cultures, Islamic cultures are noted for their high levels of gender differentiation. Gender is a primary conceptual category in every human society. In certain societies, however, it takes on more prominence as an organizing category. High gender differentiation tends to be a hallmark of deeply authoritarian cultures or, to put it in other terms, strong male-dominance hierarchies.<sup>30</sup> In an empirical analysis, Steven Fish debunks the notion that Islamic societies are disproportionately involved in conflict or disproportionately suffer from authoritarian rule.<sup>31</sup> Rather, he cites two indicators that he claims better explain the variance of these variables in the Islamic world: overall sex ratio and the literacy gap between males and females. Fish finds that models incorporating these two variables are significantly cor-

27. Jean Bethke Elshtain, *Just War against Terror: The Burden of American Power in a Violent World* (New York: Basic Books, 2003), pp. 38, 40.

28. Ahmed Rashid, *Taliban: Militant Islam, Oil, and Fundamentalism in Central Asia* (New Haven, Conn.: Yale University Press, 2000).

29. Charles Krauthammer, "Abu Ghraib as Symbol," *Washington Post*, May 7, 2004.

30. L.L. Betzig, "Despotism and Differential Reproduction: A Cross-Cultural Correlation of Conflict Asymmetry, Hierarchy, and Degree of Polygyny," *Ethology and Sociobiology*, Vol. 3, No. 4 (1982), pp. 209–221.

31. M. Steven Fish, "Islam and Authoritarianism," *World Politics*, Vol. 55, No. 1 (October 2002), pp. 4–37.

related to authoritarianism in Islamic countries. He hypothesizes that female oppression—one of the earliest social acts observed by all members of the society—provides the template for other types of oppression, including authoritarianism. His work confirms that of other scholars who have shown a strong and significant correlation between the oppression of women and authoritarianism.<sup>32</sup>

Highly gender differentiated cultures are an important context in which to understand the use of violence by males: these are cultures in which males become hypervigilant about feelings of emasculation or humiliation. High levels of gender differentiation, historically a common feature in human societies, are less common in the twenty-first century. Some societies have profoundly mitigated the natural male-dominance hierarchy, whereas others have continued to embrace this model. High levels of gender differentiation and violence against women help us to identify unmitigated cases. Most, though not all, Islamic societies fall into the “unmitigated” category, with Middle Eastern Islamic nations having the highest scores of all in quantitative studies.<sup>33</sup>

Second, Islamic nations not only have less power than the United States, but they must tolerate U.S. economic, diplomatic, and even military involvement in their domestic and regional affairs. As a result, young adult males in these societies feel a keen sense of emasculation and humiliation. Without any compensating social status, these young men, in particular, have a strong cultural imperative to find some means to address these emotions.<sup>34</sup>

Third, though the concepts of honor and virility may be hard for a Western academic audience to comprehend, given the largely successful efforts to erase them from dominant discourses in Western societies, masculinity has traction in other societies, none more so than in Muslim societies. Honor-based societies often situate honor in the persons of their women. Honor killings, for example, almost always involve the killing of women for sullyng the honor of their male kin. The bodies of women, then, are the subject of masculine anxiety in such societies. For example, according to Shalom Harrari, a former Israeli intelligence official in charge of the occupied territories until 2000, the sight of Israeli soldiers searching Palestinian women was unbearable to other Palestinians: “Basically, if we touched a woman to search her, we touched her honor, which in turn implicated her family, and eventually the entire village felt it was their responsibility to defend her honor. In the end, the soldiers

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32. Betzig, *Despotism and Differential Reproduction*.

33. Carol R. Ember and Melvin Ember, eds., *Encyclopedia of Sex and Gender: Men and Women in the World's Cultures*, 2 vols. (New York: Springer, 2004).

34. Farhad Khosrokhavar, *Suicide Bombers: Allah's New Martyrs*, trans. David Macey (London: Pluto, 2005), pp. 130–133.

found themselves confronting the civilian population over the honor of their women.”<sup>35</sup>

Indeed, while honor and shame are prime motivating forces in many societies, the confluence of high gender differentiation and situational emasculation puts Middle Eastern Islamic nations at high risk for in-group male push-back against a humiliating international dominance hierarchy—especially among young, non-alpha males. Nathaniel Fick, a former Marine Corps platoon leader in Operation Iraqi Freedom in 2003, reports that all Iraqi social groups welcomed liberation from Saddam Hussein except males in their twenties and thirties, who believed that the Marines did what the Iraqis could not—rid their country of a tyrant. As a result, they felt emasculated.<sup>36</sup> Accordingly, though seldom acknowledged, the context of Islamic societies with respect to gender differentiation and the emotions of young males is a predisposing factor for terrorism.

### *Polygyny and Islamic Suicide Terrorism*

The inequitable distribution of resources across male cohorts in primate groups that form dominance hierarchies creates serious, often violent, competition when these resources are scarce. This is especially true regarding the scarcity of mating partners. Polygynous primate groups have the highest level of social violence, because the monopoly of females by elite males threatens non-alpha males with complete reproductive failure.<sup>37</sup> In evolutionary terms, the threat of complete reproductive failure is highly motivating, especially for the subpopulation of young adult males.

As a religious and cultural practice, polygyny contributes to the scarcity of mates for non-alpha males. Generally, if one male has multiple wives and birth sex ratios remain approximately 50-50, fewer females will be available for the remaining males. Males without mates will have to resort to extraordinary

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35. Quoted in Barbara Victor, *Army of Roses: Inside the World of Palestinian Women Suicide Bombers* (New York: Rodale, 2003), p. 13.

36. Nathaniel C. Fick, *One Bullet Away: The Making of a Marine Officer* (New York: Houghton Mifflin, 2005), pp. 318, 340. As one Iraqi translator told Fick, “You should not have done this. Saddam was a bad man, but America should have waited for the Iraqi people to overthrow him themselves.” *Ibid.*, p. 340.

37. Betzig, *Despotism and Differential Reproduction*; David M. Buss, *The Evolution of Desire: Strategies of Human Mating* (New York: Basic Books, 1994), pp. 63–64; Napoleon A. Chagnon, *Yanomamö*, 4th ed. (Ft. Worth, Tex.: Harcourt, Brace, and Jovanovich, 1992), p. 191; Bobbi Low, *Why Sex Matters: A Darwinian Look at Human Behavior* (Princeton, N.J.: Princeton University Press, 2000), pp. 57–76; Malcolm Potts and Thomas Hayden, *Sex and War: How Biology Explains Warfare and Terrorism and Offers a Path to a Safer World* (Dallas, Tex.: Benbella, 2008); and Thayer, *Darwin and International Relations*, pp. 131–132.

acts to increase their social status to allow them to attract a mate. Men with multiple wives may likewise have to resort to extraordinary acts to reinforce the social order that favors them over other men. As Alan Miller and Satoshi Kanazawa put it, "Across all societies, polygyny makes men more violent, increasing crimes such as murder and rape, even after controlling for such obvious factors as economic development, economic inequality, population density, the level of democracy, and political factors in the region."<sup>38</sup> Islam, unlike Christianity, Judaism, Hinduism, Confucianism, or any other major religion, continues to defend polygyny. The uniquely Islamic contemporary practice of polygyny adds a level of scarcity simply not found in the Western Hemisphere, non-Islamic Asian nations, or Europe. Only in sub-Saharan Africa is there a comparable practice of polygyny, with its attendant societal instability (see figure 1).<sup>39</sup> Yet, while certainly suffering from high levels of societal violence as predicted, non-Islamic African societies do not share the belief that suicide promises reproductive success in paradise.

Baldly put, polygyny means mates for some men and none for others. And who will not obtain mates? It will not be those with advantages, but rather those who lack them. Non-alpha males will be the reproductive losers, and this gives them great motivation to use force, the sole area in which they possibly hold a reproductively relevant advantage over alpha males.

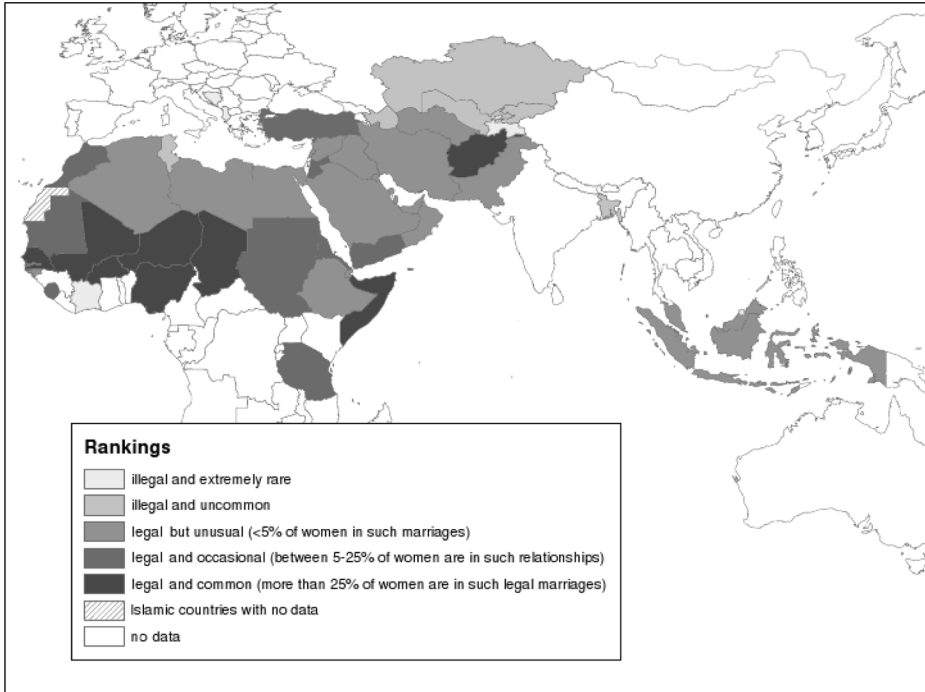
Alpha males and non-alpha males understand the ramifications of polygyny for their relations: polygyny will heighten in-group violence against alpha males by non-alpha males absent a mechanism that directs this violence to an out-group. From the perspective of alpha males, suicide terrorism offers some interesting possibilities. A non-alpha male in a polygynous society with high levels of gender differentiation wants to find a way to project power, preferably through violence. In this way, he hopes to obtain greater social status and thus greater reproductive success. An alpha male in the same society wants to find a way to channel that violence to out-groups without allowing the non-alpha male to achieve social status through violence, which ultimately could threaten the interests of the alpha males. Suicide terrorism, sanctioned and applauded by religious belief, represents an attractive strategy in this context. If alpha males can persuade non-alpha males that (1) their violence should be directed to out-groups, (2) that thereby these non-alpha males will greatly increase their social status and make their families proud, but (3) they will have

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38. Alan S. Miller and Satoshi Kanazawa, "Ten Politically Incorrect Truths about Human Nature," *Psychology Today*, Vol. 40, No. 4 (July/August 2007), p. 92.

39. For an East Asian variant of this scarcity, which is based not on polygyny but rather on sex-selective abortion, see Valerie M. Hudson and Andrea M. den Boer, *Bare Branches: The Security Implications of Asia's Surplus Male Population* (Cambridge, Mass.: MIT Press, 2004).

Figure 1. Prevalence of Polygyny in the Islamic World, circa 2007



SOURCE: WomanStats Database, <http://womanstats.org>, accessed December 17, 2009.  
NOTE: States ranked have a plurality or majority Muslim population.

to die and experience their reproductive success vicariously through their kin, or in the afterlife, then the threat of in-group violence can be decreased.

For some non-alpha males, becoming a *shaheed* is the most effective response to the human evolutionary conundrum produced by male dominance hierarchies, high levels of gender differentiation, and the scarcity of females resulting from polygyny.<sup>40</sup> In 2003 Robert Pape found that among Islamic suicide terrorists, 97 percent were single and 84 percent were male. If one excludes the Kurdistan Workers' Party, which promotes gender equality, the gender ratio rises to 91 percent.<sup>41</sup> These young men come predominantly from lower socio-

40. Satoshi Kanazawa, "Why Are Most Suicide Bombers Muslim?" Interdisciplinary Institute of Management, London School of Economics, 2005.

41. Robert A. Pape, "The Strategic Logic of Suicide Terrorism," *American Political Science Review*, Vol. 97, No. 3 (August 2003), pp. 343–361. Pape constructed an original database of suicide terrorist attacks worldwide from 1980 to 2001 and has continued to update it.



economic strata of society than those involved in nonsuicide terrorism, despite the somewhat anomalous case of the September 11 attacks. Evolutionary psychology would predict that this subpopulation would be most susceptible to the lure of suicide terrorism.

Islamic religious texts promise the *shaheed* seventy-two virgins in the after-life.<sup>42</sup> Miller and Kanazawa note, "It is the combination of polygyny and the promise of a large harem of virgins in heaven that motivate many young Muslim men to commit suicide bombings. Consistent with this explanation, all studies of suicide bombers indicate that they are significantly younger than not only the Muslim population in general but other (nonsuicidal) members of their own extreme political organizations like Hamas and Hezbollah. And nearly all suicide bombers are single."<sup>43</sup>

Failed suicide bombers may not admit to this temptation as motivation for their action, perhaps considering it too vulgar or impious. Nevertheless, it can be a key draw for a male contemplating poor reproductive prospects in this life. In March 2004, Husam Abdu (also Abdo), a sixteen-year-old failed suicide bomber captured at an Israeli checkpoint in Gaza, explained to Israeli intelligence officials that his dwarfism made him the object of ridicule at school, and he had been tempted by the promise of sexual relations with virgins in paradise.<sup>44</sup> Another captured would-be suicide terrorist, a Moroccan man, aged twenty-six, suffered from facial disfigurement.<sup>45</sup> A study of suicide bombers in Iraq conducted by the U.S. military found that they were almost always single males from eighteen to thirty, with a mean age of twenty-two and no children.<sup>46</sup> The study concluded that most are "alienated young men from large families who are desperate to stand out from the crowd and make their mark."<sup>47</sup>

Hypergyny in polygynous culture is another reason why some young men experience low status. Poor, higher-birth-order young men from large families are at high risk for reproductive failure in such societies and must resort to extraordinary measures to increase their attractiveness as mates for themselves

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42. The Koran's ninth sura is the classic text on jihad. For an exceptional overview of the relevant sections of the Koran and hadith that concern jihad, see Andrew G. Bostom, ed., *The Legacy of Jihad: Islamic Holy War and the Fate of Non-Muslims* (Amherst, N.Y.: Prometheus, 2005). For the description of the sexual and other rewards in paradise, see Koran 2:25, 4:13, 10:9, 47:15, 52:17–24, 55:46–76, 56:15–40, 66:8, 76:12–22.

43. Miller and Kanazawa, "Ten Politically Incorrect Truths about Human Nature," p. 93.

44. Margot Dudkevitch, "IDF Disarms Boy, 14, with Bomb Belt," *Jerusalem Post*, March 25, 2004; and Amos Harel and Arnon Regular, "IDF Apprehends 14-Year-Old Suicide Bomber," *Haaretz*, March 25, 2004, <http://www.haaretz.com/hasen/pages/ShArt.jhtml?itemNo?408422>.

45. Quinn, "U.S. Draws Portrait of Iraq Bombers."

46. *Ibid.*

47. *Ibid.*

or their surviving relatives. Furthermore, for a good Muslim in the ecological environment of the Arabian Peninsula and with strict religious prohibitions governing behavior, the promise of a resource-abundant environment in the afterlife represents an attractive alternative, which could greatly influence his behavior in this world.

Although it might not occur to those who study this problem through a purely social lens, in one sense Islamic fundamentalist terrorism may be considered a non-alpha-male mating strategy. It offers non-alpha males without females, and with little hope of marriage, an opportunity to increase their social status and achieve sexual gratification in the afterlife.<sup>48</sup>

Of course, suicide terrorism does not contribute to the suicide bomber's actual fitness in this life—obviously, it ends it. It is, above all, the faith of an Islamic fundamentalist terrorist in the afterlife that may encourage him to undertake a suicide mission. As a captured attempted suicide bomber, fifteen-year-old Jalal, told Anat Berko: "There are 72 virgins, and Allah lets me marry 72 virgins. There are a lot of things I can't describe. . . . I'll find everything in paradise, a river of honey, a river of beer and alcohol, and anyway there are a lot of rivers in paradise."<sup>49</sup> Sheikh Raid from Umm al-Fahm, identified as the "most prominent Palestinian cleric in Israel . . . asserted in no uncertain terms in an interview to . . . Ha'aretz, that he 'had proof' that the story of the virgins was true" because it is documented in the Koran and sunna.<sup>50</sup> He noted that the *shaheed* "received from Allah six special gifts, including 70 [sic] virgins, no torment in the grave, and the choice of 70 members of his family and his confidants to enter Paradise with him."<sup>51</sup> According to terrorism scholar Raphael Israeli, a sixteen-year-old Muslim youth leader stated, "Most boys cannot stop thinking about the virgins."<sup>52</sup>

Benefits also accrue to the family of the *shaheed*. From the life sciences' perspective, the *shaheed*'s action contributes to inclusive fitness: like others,

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48. Khosrokhavar, *Suicide Bombers*, p. 134.

49. Quoted in Anat Berko, *The Path to Paradise: The Inner World of Suicide Bombers and Their Dispatchers*, trans. Elizabeth Yuval (Westport, Conn.: Praeger, 2007), p. 162. In the West, there is a modest controversy about how to translate *houriya*, which an overwhelming number of interpretations understand as "black-eyed and fair-skinned virgins." As Israeli explains, "Some Muslim organizations in the West insisted that it was a metaphoric appellation of 'angels'; or 'heavenly beings'. . . . To counter those denials, Sheikh Palazzi, an Italian Muslim leader, gave references in the Qur'an as well as in Islamic tradition (Sunna or Hadith) where the doctrine of the 72 (not 70) 'black-eyed' 'wives' is elaborated in vivid detail, and took the other Muslim leaders in the West to task for their ignorance of the sources. Among Muslim clerics in the Muslim world there is no equivocation; things are clearly and unabashedly stated." Quoted in Israeli, *Islamikaze*, p. 217.

50. Quoted in Israeli, *Islamikaze*, p. 220.

51. Ibid.

52. Quoted in *ibid.*, p. 219.

*shaheeds* sacrifice and seek rewards not only for themselves but also for their genetic relatives as well. The Muslim suicide terrorist knows that he and his family may be venerated for his action. His mother, for example, will be exalted by members of her community and known as *Um-Shaheed*, the mother of a *shaheed*. As one mother explained, "I have special status with Allah. I get a lot of respect from people. I get money, not just for my studies, but for travel, for research, for everything I do. People help a lot when they hear I'm a *shaheed's* mother."<sup>53</sup>

Also, the terrorist's act of committing suicide may increase the prestige of his siblings, increasing their marriage prospects. Terrorist organizations or their sympathizers often pay a reward to a successful *shaheed's* family, allowing the family greater means to pay bride dower.<sup>54</sup> For example, the sole terrorist survivor from the 2008 Mumbai attacks, Ajmal Kasab, age twenty-one, confessed that "he had joined Lashkar-e-Taiba [the terrorist organization responsible for the attacks] at the urging of his father, who said he would earn a lot of money and would 'give us some of the money, too, and we won't be poor anymore. Your brothers and sisters will be able to get married.'"<sup>55</sup> Perhaps most important, the hadith promises that the *shaheed* may save seventy members of his family from the tortures of the grave and admit them directly to paradise.<sup>56</sup>

If reproductive success is the benchmark of biological fitness, then in the Islamic context, suicide terrorism is a means toward achieving that success because of the increased status given to surviving relatives. There are, however, two theological quandaries often glossed over by Islamic religious authorities: Can *shaheeds* or *shaheedas* (female suicide terrorists) have children in paradise? And do the *shaheeds* or *shaheedas* believe that they can? Regardless, the promotion of suicide terrorism within a religiously credible context helps alpha males to secure their dominant position in the social hierarchy, ensure that threatening out-groups face violence, and dampen the inevitable social instability of a polygynous society. From the perspective of the life sciences, Islamic fundamentalist suicide terrorism has an identifiable logic and so, in the Islamic context, can be seen as an understandable choice for a young man or woman.

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53. Quoted in Berko, *The Path to Paradise*, p. 144.

54. Debra D. Zedalis, *Female Suicide Bombers* (Honolulu: University Press of the Pacific, 2004), pp. 19–20.

55. Vikas Bajaj and Lydia Polgreen, "Suspect Stirs Mumbai Court by Confessing," *New York Times*, July 20, 2009, [http://www.nytimes.com/2009/07/21/world/asia/21india.html?\\_r=2](http://www.nytimes.com/2009/07/21/world/asia/21india.html?_r=2).

56. Jason Burke, *Al-Qaeda: Casting a Shadow of Terror* (London: I.B. Taurus, 2003), p. 69; and Jessica Stern, *Terror in the Name of God: Why Religious Militants Kill* (New York: HarperCollins, 2003).

### *Obstructed Marriage Markets and Islamic Terrorism*

Marriage markets are obstructed not only because of polygyny but also because of rapidly increasing dowry prices across the Islamic world. Delayed marriage has become a new norm in the Middle East. For example, in Egypt, one study documents that families of young adult males must save five to seven years to pay for their sons' marriages. From 2000 to 2004, wedding costs in Egypt rose 25 percent. As a result, the average marriage age for Egyptian men has risen sharply, from the early twenties to the late twenties and early thirties. In one study, nearly 25 percent of young adult males in Egypt had not married by age twenty-seven; the average age was thirty-one.<sup>57</sup> In poverty-stricken Afghanistan, wedding costs for young men average \$12,000–\$20,000.<sup>58</sup> In Saudi Arabia, men usually are unable to marry before age twenty-nine; often they marry only in their mid-thirties.<sup>59</sup> In Iran, 38 percent of twenty-five-year-old to twenty-nine-year-old men are unmarried.<sup>60</sup> Across the Middle East, only about 50 percent of twenty-five-year-old to twenty-nine-year-old men are married, the lowest percentage for this group in the developing world.<sup>61</sup> Whether in Afghanistan, Iran, Lebanon, or the United Arab Emirates, the exorbitant costs of marriage have delayed the age at which Muslim men marry. Polygyny, practiced almost exclusively by men with means, has been a strong contributing factor in the rise of dower costs for the rest of the men in society and has increased the competition for available women.

Commentators have lamented the emergence of a new class of "old maids" (*unoussa*), young adult men who cannot afford to marry and feel both ashamed and emasculated. In Islamic society, as in most societies, full manhood is achieved only when a male marries and becomes head of the household. Unmarried men are considered adolescents, dependents of their parents. Because marriage is also a religious obligation for Muslims, the reproductive failure of sons is catastrophic for their families. The resulting social pressures facing these men are enormous. As Diane Singerman puts it, "If young people remain in this liminal state between child and adult, financially dependent on their families and morally obligated to them far longer than

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57. Diane Singerman, "The Economic Imperatives of Marriage: Emerging Practices and Identities among Youth in the Middle East," Working Paper, No. 6 (Washington, D.C.: Middle East Youth Initiative, September 2007), pp. 4, 13.

58. Kirk Semple, "Big Weddings Bring Afghans Joy, and Debt," *New York Times*, January 14, 2008.

59. Singerman, "The Economic Imperatives of Marriage," p. 25.

60. Michael Slackman, "Stifled, Egypt's Young Turn to Islamic Fervor," *New York Times*, February 17, 2008.

61. *Ibid.*

previous generations, then it is not surprising that social, moral, and political tension is mounting.”<sup>62</sup>

One Egyptian commentator notes that these young men are seeking dangerous jobs: “The youth are seeking death. They’re already dead at home.”<sup>63</sup> Singerman comments, “We can infer that the notion that they are ‘already dead at home’ refers to both their financial situation, their political exclusion, and their unmarried status.”<sup>64</sup> And as we have shown, evolutionary insight tells us that reproductive failure in a biological sense can aggravate this desperation. This situation offers Islamist movements an opportunity they have been able to exploit successfully. In a way, conditions created by Islamic culture (i.e., high levels of gender differentiation, prevalent polygyny, religious sanction for suicide, and obstructed marriage markets) could not be more opportune for the growth and spread of terrorist organizations. The journalist Michael Slackman notes, “Here in Egypt and across the Middle East, many young people are being forced to put off marriage, the gateway to independence, sexual activity, and social respect. . . . In their frustration, the young are turning to religion for solace and purpose, pulling their parents and their governments with them.”<sup>65</sup> One Egyptian young man states, “Sometimes, I can see how it [this frustration] does not make you closer to God, but pushes you toward terrorism. Practically, it killed my ambition. I can’t think of a future.”<sup>66</sup> Delayed marriage and, more important, complete reproductive failure are common elements exploited by groups seeking young adult men interested in redressing the injustice they feel on a personal level, by force if necessary.

Singerman notes, “To mobilize supporters, there were many reports of radical Islamist groups in Egypt in the 1990s arranging extremely low-cost marriages among the group’s members.”<sup>67</sup> This strategy is a double-edged sword, however. It is exceedingly difficult to convince a married Muslim man with at least one healthy young son still in need of his protection to commit suicide. His masculinity and his religious beliefs converge in the person of that boy, and that father will not want to fail his obligations as a Muslim man. Various organizations that track the demographic characteristics of Palestinian suicide terrorists find that there was only one father with a son among them, and that man’s only son was handicapped. Indeed, terrorists have shown the ability of household formation to defuse terrorism. When the Palestinian Liberation

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62. Singerman, “The Economic Imperatives of Marriage,” p. 29.

63. Quoted in *ibid.*, p. 34.

64. *Ibid.*, p. 34.

65. Slackman, “Stifled, Egypt’s Young Turn to Islamic Fervor.”

66. Quoted in *ibid.*

67. Singerman, “The Economic Imperatives of Marriage,” p. 49.

Organization wanted to rein in a more militant wing in the 1970s, the Black September organization, it did so by marrying its members off in the hope they would produce sons. When the men married, and especially when they had sons, their militancy waned dramatically.<sup>68</sup> More recently, " Hamas leaders have turned to matchmaking, bringing together single fighters and widows, and providing dowries and wedding parties for the many here who cannot afford such trappings of matrimony."<sup>69</sup> In other words, Hamas is taking the pool of recently available women and marrying them off, complete with dower, to its fighters. It is possible that Hamas is seeking to reduce internal tensions. At the same time, this strategy will not increase the pool of available suicide terrorists.<sup>70</sup>

Middle East governments have also noted the power of this approach. The government of the United Arab Emirates makes low-cost marriage loans to young men. The Egyptian government offers mass weddings for hundreds of couples at a time, to cut costs.<sup>71</sup> Iran's president, Mahmoud Ahmadinejad, likewise proposed a national "Love Fund" of more than \$1 billion to facilitate marriage among its young men.<sup>72</sup> The Saudi government pays dower costs for its soldiers. Not only terrorists but also governments have used the lure of reproductive success to shape the direction taken by its young adult males. Because polygyny reduces the number of women available for such marriages, governments are now looking with new and less tolerant eyes on that ancient practice.

### *Recommendations*

While life science insights may assist scholars of terrorism to better identify the causes of Islamic fundamentalist suicide terrorism, they also aid in the development of potential solutions. Our analysis yields four recommendations to counter suicide terrorism in the Islamic context. These recommendations are based on the logic of our arguments, and although we are not in a position to conduct field experiments of their effectiveness, we believe that they should be seriously considered and researched by those tasked with countering Islamic suicide terrorism.

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68. Bruce Hoffman, "All You Need Is Love," *Atlantic*, December 2001, pp. 34–37, <http://www.theatlantic.com/doc/200112/hoffman>. See also Potts and Hayden, *Sex and War*, pp. 119–120.

69. Taghreed El-Khodary, "For War Widows, Hamas Recruits Army of Husbands," *New York Times*, October 31, 2008, <http://www.nytimes.com/2008/10/31/world/africa/31iht-31gaza.17404249.html>.

70. *Ibid.*

71. Slackman, "Stifled, Egypt's Young Turn to Islamic Fervor."

72. Singerman, "The Economic Imperatives of Marriage," pp. 27–28.

The first recommendation is to promote women's rights in the Muslim world. The promotion of women's rights dampens levels of gender differentiation in society, which reduces the strength of painful motivators of suicide terrorism such as dishonor and emasculation. It also requires the creation of societal templates of conflict resolution that eschew violence. Research shows that the peacefulness of nations is strongly and negatively correlated with the level of violence against women in society. Specifically, when society's male members develop ways of relating to women other than through physical dominance and violence, and when women begin to take coordinated action to dampen the most oppressive features of their society, positive change will spread to broader social realms, and even affect interstate relations.<sup>73</sup> Additionally, steps to reduce the stark economic vulnerability of women, such as the creation of microfinance programs, can contribute to this broader effort.

This change must come from within the Islamic world. As the United States has learned when trying to export democracy, some efforts must have local roots to be sustainable. This applies to the treatment of women, as well. Yet it cannot be overlooked that all Islamic countries have signed the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW)—some with reservations (Saudi Arabia) and some without (Afghanistan). All Muslim countries have active women's organizations that have pushed for the lifting of reservations and full implementation of CEDAW norms. The existence of CEDAW, and the Islamic countries' accessions to it, show that women's rights need not be construed as a purely Western ideological construct. The international community must lend culturally appropriate assistance to governments or other entities in the Muslim Middle East to advance progress on CEDAW implementation.

Furthermore, international norms of women's rights already prohibit polygyny, and this point should be raised to a higher profile in international human rights discourse. Although most Muslim countries are unlikely to prohibit polygyny outright, as Tunisia has done, some (including Morocco) have erected stiff legal obstacles to this practice by requiring official judicial consent, the first wife's written permission for her husband to take another wife, and demonstration of the man's ability to provide full equal economic support for all wives prior to entering another marriage, as well as making it harder for men to divorce polygynous wives.<sup>74</sup>

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73. Valerie M. Hudson, Mary Caprioli, Bonnie Ballif-Spanvill, Rose McDermott, and Chad F. Emmett, "The Heart of the Matter: The Security of Women and the Security of States," *International Security*, Vol. 33, No. 3 (Winter 2008/09), pp. 7–45.

74. WomanStats Database, variable PW-Law-1, indicating laws concerning polygyny, <http://www.womanstats.org>.



Also, women must have the right to control their own reproduction. Empowered women have fewer children and invest more in the children they do have. We predict that it is higher-birth-order sons, who have little hope of their families accumulating enough resources to ever contract marriage for them, who are prime fodder for terrorist groups promising them virginal brides in heaven. Because to date there have been so few consilient efforts to understand terrorism, we can find no database with information on the birth order of suicide terrorists. We predict, however, that with smaller families will come a smaller population of such vulnerable young men.

Our second recommendation is that Muslim Middle Eastern nations must begin to control dowry costs. Innovative approaches, such as government payment of wedding costs or government provision of low-cost housing for newlyweds, should be promoted. Governments should minimize concerns among their young adult men that they will be complete reproductive failures. These men must be given a tangible stake in society by tying their manhood to familial responsibilities. Governments should facilitate this tie by helping to ease their societies' constricted marriage markets, using policy approaches adapted from other Islamic nations, such as Egypt. Furthermore, the promotion of non-permanent marriages does not, from an evolutionary standpoint, ameliorate militancy, and therefore, for example, the practice of Hezbollah facilitating *mutaa* marriages for young adults in its communities in Lebanon must begin to be seen by the Lebanese government as the threat it represents.<sup>75</sup>

Third, building democratic, liberal governments in the Middle East is critical, not only because it coincides with advancing women's rights but also because constitutional democracy ensures that the rights of individuals are protected. In addition, religious authority will be subordinate to the rule of democratically established law, and this will promote an alternative form of government than that offered by the Islamic fundamentalists. Effective democracy is much more than procedural democracy, however. It means instilling key elements of liberalism in the governments of the Muslim Middle East. These elements include economic, social, and political freedom, including freedom of conscience, speech, assembly, and the press; the rule of law and an independent judiciary; and respect for individual rights and human dignity. These changes will require several generations to accomplish. Naturally, this process will be arduous and take time, and there will be setbacks. But we must not lose perspective: human history is replete with examples of resistance to

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75. Hanin Ghaddar, "The Militarization of Sex: The Story of Hezbollah's Halal Hookups," *Foreign Policy* (online edition), November 25, 2009, [http://www.foreignpolicy.com/articles/2009/11/25/the\\_militarization\\_of\\_sex](http://www.foreignpolicy.com/articles/2009/11/25/the_militarization_of_sex).

such transformations, whether in Great Britain and the United States, Europe and Japan, East Asia and Latin America, and now the Middle East.

Building effective democracy in the Middle East will cause significant economic, political, and social changes—the rise of individualism, democratic political processes, capitalism, women’s rights—which will, in turn, weaken the message of the terrorists and their ability to retain their membership and attract new members. Effective democracy will also provide a social leveling force, yielding more opportunity and more equitable social conditions over time that will provide other paths to high social status, and thus marriage opportunities and well-being for relatives. Democracy usually carries with it freer, more open markets, which might also provide an economically viable alternative to terrorism for some individuals. Efforts to promote effective democracy in the Middle East, however, must be made on a case-by-case basis, so as not to destabilize existing regimes, which could lead to increased violence and anarchy. But here again, the messengers must be Muslims. Muslim liberal reformers in the Islamic world can be considered antiterrorist allies in this endeavor—from Morocco to Indonesia and from Turkey to Pakistan.

Fourth, the attractiveness of the terrorists’ message must be combated directly through propaganda that taps into the more primal motivations of potential suicide terrorists, as identified by the life sciences—individual and inclusive fitness. Our analysis suggests how competing messages may be tailored to accomplish this. We cannot address which medium would be most effective, but it is vital that these messages come from Arab outlets to increase the chances of acceptance. The first step is to promote the message that “the family” is the Muslim community, not the terrorist group, and that there is no justification in the Koran or hadith to kill other family members, as Islamic fundamentalist terrorists have done. As one report put it, “If the seeds of doubt can be planted in the mind of al-Qaida’s strategic leadership that an attack would be viewed as a shameful murder of innocents . . . then the order may not be given.”<sup>76</sup> Indeed, the Libyan Islamic Fighting Group has recently written a 417-page document that “corrects” the common view of jihad and offers ethical boundaries. For example, “Jihad has ethics and morals because it is for God. That means it is forbidden to kill women, children, elderly people, priests, messengers, traders and the like. Betrayal is prohibited and it is vital to keep promises and treat prisoners of war in a good way. Standing by those ethics is what distinguishes Muslims’ jihad from the wars of other nations.”<sup>77</sup> This

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76. Eric Schmitt and Thom Shanker, “U.S. Adapts Cold-War Idea to Fight Terrorists,” *New York Times*, March 18, 2008.

77. Quoted in Nic Robertson and Paul Cruickshank, “New Jihad Code Threatens al Qaeda,”

type of reform movement from within the jihadist community must be publicized and praised.

Additionally, public messages should emphasize that terrorists seduce individuals away from their true familial obligations, and this is un-Islamic and dishonorable. Shame is a powerful personal tool to combat the ideology of the terrorists. The message might be: "Osama bin Laden is a deadbeat dad who never took care of his many children," or "A suicide terrorist is a son who failed his mother and father and gave them no grandson to cheer their old age," or "A woman suicide terrorist would contribute more to the cause by being a wife and mother. If she does not choose this noble path, maybe she has something to hide." Shaming themes within the context of family obligation, indicating that a suicide terrorist is not a real man, because a real man would have raised a son for his family in this life, would be a very important element in this cultural context. As recently noted, "The [U.S.] government is seeking ways to amplify the voices of respected religious leaders who warn that suicide bombers will not enjoy the heavenly delights promised by terrorist literature, and that their families will be dishonored by such attacks."<sup>78</sup>

Another possibility would be to draw from Islamic cultural sources a competing, negative message about suicide terrorists based on themes that would intersect with the hypervigilance concerning masculinity noted previously. If masculinity can rightfully be called into question for the suicide terrorist, this competing message may be an effective deterrent. We do not suggest this approach lightly: our life sciences analysis leads us to believe that many young men may find themselves caught in a no-win cultural trap where they become susceptible to arguments promoting suicide. Although this competing message relies on shaming themes, if shame leads fewer young men to take their own lives and the lives of others, it is well worth considering, for all of these lives (including the life of the suicide terrorist recruit) have value. In this competing, culturally based message, the implication could be that the suicide terrorist must have mental troubles, be physically disfigured, or have some other problem that calls into question his sexual desirability and manliness; otherwise he would have chosen the path of true manhood and family. The message would be that only young men who are not attractive to women—sexual undesirables—choose to become suicide terrorists. The cultural message of reproductive success in this life as the measure of a true man in Islamic society

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*CNN.com*, November 10, 2009, <http://www.cnn.com/2009/WORLD/africa/11/09/libya.jihadi.code/index.html>.

78. Schmitt and Shanker, "U.S. Adapts Cold-War Idea to Fight Terrorists." See also Lawrence Wright, "The Rebellion Within: An Al Qaeda Mastermind Questions Terrorism," *New Yorker*, June 2, 2008, pp. 36–53.

can serve to turn around the perverse logic of the illusory reproductive “success” of suicide. If a man must view his choice to be a suicide terrorist as a public admission of being a sexual undesirable, this may taint the suicidal path with a deep shame founded in culturally based fears of emasculation, and thus be an effective deterrent.<sup>79</sup>

The media can play a key role in this strategy. Governments worldwide should put pressure on their media not to lionize suicide terrorists or to provide their surviving relatives the opportunity to praise their actions. Rather, when suicide terrorism occurs, shaming themes based on the perpetrator’s not being an honorable son or being unattractive to women or being somehow socially defective would be profoundly discouraging to would-be terrorists. If the choice to become a suicide terrorist is simultaneously viewed as a choice to publicly announce that a man is not manly (or a woman has something to hide), this may become an effective deterrent. We also offer two corollaries to this approach. One corollary would be to allow marriage and conjugal visits for jailed terrorists, which might help to curb recidivism, especially if male offspring are the result of these visits. The second would be to develop new rehabilitation and jobs programs in the Middle East for the disabled and the handicapped to give them hope in this life and not just in the afterlife.

These recommendations would require time to implement, but this should not discourage countries facing the threat of Islamic fundamentalist suicide terrorism. The threat is a long-term one, and so future-oriented policies must be implemented. Moreover, significant social change is sometimes possible quickly. For example, the modern women’s rights movement in the West is just forty years old, and most change has come in the last twenty years.

## *Conclusion*

A potent mix of social science and life science factors—international anarchy, U.S. intervention in Islamic nations, the approbation of suicide in Islamic scripture, very high levels of gender differentiation, religious support for polygyny, and obstructed marriage markets leading to significantly delayed marriage prospects for young Muslim men in the Middle East—has contributed to the rise of Islamic suicide terrorism. Insights from the life sciences

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79. In a similar vein, the promotion of alternative translations of the “72 virgins” phrase might also be useful. A new translation has surfaced in European circles showing that the phrase “72 virgins” is a mistranslation of a phrase that more likely means “white fruit” (or “white raisins” or “white grapes”). From a life sciences perspective, the allure of “white fruit” for the young male suicide terrorist is just not as primally motivating. Ibn Warraq, “Virgins? What Virgins?” *Guardian*, January 12, 2002, <http://www.guardian.co.uk/religion/Story/0,2763,631357,00.html>.

cannot replace those from the social sciences. Still, we believe that our investigation has shown the value added of incorporating work from the life sciences to help explain Islamic fundamentalist suicide terrorism and craft policy initiatives to combat it.

Insights from the life sciences complement those from the social sciences, and it is vital to integrate all of the knowledge on human behavior available to us. Indeed, a consilient approach demands the collection of data about phenomena that might not otherwise be considered important to evaluate, such as tracking dower costs longitudinally or noting the birth order of suicide terrorists. This additional information, coupled with insights provided by the consilient approach, may lead to more effective policies for addressing problems such as suicide terrorism. Consilience represents an important path forward for scholars and policymakers alike.